Commonwealth of Kentucky
Division for Air Quality

PERMIT STATEMENT OF BASIS

Construction/Operating Permit draft No. VS-06-002
OSRAM SYLVANIA PRODUCTS INC.
VERSAILLES, KY.
June 27, 2006
SANDRA M. COOKE: REVIEWER
Plant I.D. # 21-239-00013
A.I. # 34770

SOURCE DESCRIPTION:

Osram-Sylvania has applied to add a ninth lamp manufacturing line to its facility in Versailles, Kentucky. This line, designated by the plant as Line 44, will operate using the following process. Fluorescent lamps are coated on the inside with a fluorescent phosphor prior to drying in a tunnel. After coating and drying, each lamp is etched with ink, dried in the marking oven and brushed to remove loose coating material. The bulb is then baked to solidify coating in a uniform manner. The bulb is then exhausted, filled with a precise amount of mercury and sealed. Caps and wires are placed on the tubes before a base is permanently cemented in place and an insulating silicone-based solution is applied to the outer surface of the tube. Finally, the lamps are unloaded, checked, and packaged.

Pollutants of major concern for any lamp production facility are mercury and lead. The Site-wide Mercury limitation was established at 0.2 lb/hr (Maximum Potential of .876 TPY) based on an older administrative regulation (401 KAR 63:022) establishing Threshold Ambient Limits for various hazardous and/or toxic emissions. This regulation was later rescinded, and Federal institutions have not yet established an applicable Mercury level maximum for manufacturers in this category. However, Kentucky Administrative Regulation 401 KAR 63:021 requires that limits established for operating sources under previously active regulations remain in effect. The new line has the potential to add an additional $5.78E^{-03}$ lbs of Mercury per hour to its current output of 0.05404289 lbs/hr. This brings the new total to 0.0598 lb/hr, still well below the source's previously established limit of 0.2 lb/hr.

Using conservative numbers for lead emissions, the emissions increase due to the new line are projected to have a minimal impact on ambient concentrations. As discussed above, 401 KAR 63:021 states that limits established under rescinded regulations are still enforceable, so the 0.23 lb/hr (Maximum Potential of 1.007 TPY) source-wide limit for lead previously set remains in place. The additional process line is projected to add $3.10E^{-8}$ lbs/hr to the plant's current emission level.

For the new line, the potential emissions from each HAP will be much less than 10 tons per year and the total aggregate will be much less than 25 tons per year, meaning the proposed modification will not be considered a major change with respect to HAP emissions.

Line 44 will also be subject to the requirements of 401 KAR 59:010, New Process Operations, which sets the maximum PM_{10} emission release level for the line at 2.34 lb/hr. Calculations show the new line will add 1.7552 lb/hr of PM_{10}, which is below the regulatory limit.

COMMENTS:

Emission factors come from appropriate sections of AP 42 and Division approved emission factors.

REGULATIONS SPECIFICALLY APPLICABLE TO THIS ADDITION:

Applicable regulations: 401 KAR 52:020, Title V Permits; 401 KAR 53:010, Ambient Air Quality; Standards; 401 KAR 59:010, New Process Operations; 401 KAR 63:021, Existing sources emitting toxic air pollutants.

Note: Regulations applicable to the rest of the facility are still in force.

CREDIBLE EVIDENCE:

This permit contains provisions that require that specific test methods, monitoring or recordkeeping be used as a demonstration of compliance with permit limits. On February 24, 1997, the U.S. EPA promulgated revisions to the following federal regulations: 40 CFR Part 51, Sec. 51.212; 40 CFR Part 52, Sec. 52.12; 40 CFR Part 52, Sec. 52.30; 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12, that allow the use of credible evidence to establish compliance with applicable requirements. At the issuance of this permit, Kentucky has only adopted the provisions of 40 CFR Part 60, Sec. 60.11 and 40 CFR Part 61, Sec. 61.12 into its air quality regulations.

Periodic Monitoring:

Mercury and Lead emissions, in particular, are monitored and recorded on a monthly average. The monthly averages shall be used to calculate the 12-month rolling average.

Emissions Summary

Pollutant	Potential Lbs/Hour Additional	Potential Tons/Year Additional
PM_{10}	1.7552	7.7148
SO_2	9.97E-01	4.3676
NOx	1.00E+00	4.3822
CO	9.41E-01	4.1225
VOC	4.18E+00	18.2947
Acetic Acid	1.91E+00	8.3815
Ammonia	4.95E+00	21.6967
Amyl Acetate	1.28E-01	5.62E-01
Diacetone Alcohol	1.28E-03	5.63E-03
Dimethyl Urea	2.78E-01	1.2174
***Ethylene Oxide**	**9.35E-04**	**4.09E-03**
***Formaldehyde**	**1.04E-03**	**4.57E-03**
H2SO4	6.97E-02	3.05E-01
IPA	9.30E-02	4.07E-01
***Lead**	**3.10E-08**	**1.36E-07**

***Hg (Mercury)**	**5.78E-03**	**2.53E-02**
Monoethylamine	4.67E-03	2.05E-02
Monomethylol Urea	6.95E-02	3.04E-01
Tertiary Butanonl	1.28E-03	5.63E-03
Trioxane	3.54E+00	15.4929

* Bold typeface indicates a Hazardous Air Pollutant (HAP)